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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/221,539	12/28/98	CHENG	W 1010-1

IM62/0615

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EXAMINER	
PREISCH,N	
ART UNIT	**PAPER NUMBER**
1764	11

DATE MAILED: 06/15/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/221,539	Cheng et al.
Examiner	**Group Art Unit**
Nadine Preisch	1764

☒ Responsive to communication(s) filed on *Apr 7, 2000*.

☒ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *1-25* is/are pending in the application.

Of the above, claim(s) *13-25* is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-12* is/are rejected.

☒ Claim(s) *10-12* is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Continued Prosecution Application

The request filed on April 4, 2000 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/221,539 is acceptable and a CPA has been established. An action on the CPA follows.

Election/Restriction

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-12, drawn to a process, classified in class 208, subclass 208 R.

II. Claims 13-25, drawn to a catalyst and method of making, classified in class 502, subclass 79.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the catalyst as claimed can be used in a materially different process such as in an ion sieve process.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Malcolm Keen on September 22, 1999 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-12. Affirmation of this election must be made by applicant in replying to this Office action. Claims 13-25 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

Note: The prosecution is being continued on the invention elected and prosecuted by applicants in the prior application.

Specification

The disclosure stands objected to because of the following informalities:

On page 1, line 17 and page 14, line 5, of the specification applicants refer to a US application but do not provide the application number. It is requested that applicants provide the missing application number.

Appropriate correction is required.

Claim Objections

Claims 10-12 stand objected to because of the following informalities:

Claims 10-12 depend from higher number claims 11-13. In addition, claim 12 which is drawn to a process is dependent on claim 13 which is drawn to a non-elected composition. It appears as if applicants intend claims 10-12 to depend from a lower number method claim such as claim 9.

Appropriate correction is required.

Claim Rejections - 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5, 6 and 8 stand rejected under 35 U.S.C. 102(b) as being anticipated by Beck et al.(4,588,702).

The reference of Beck et al.(4,588,702) discloses a process of cracking a hydrocarbon feed containing a sulfur containing compound in the presence of a catalyst. See column 14, lines 13-14 and column 9, lines 29-31. The process produces a high gasoline product. See column 11, line 1. The catalyst includes a USY component containing lanthanum and/or cerium. See column 15, line 61 and column 18, lines 41-42. The amount of rare earth oxides based on the total weight of the catalyst is 0.5 to 2%. See column 18, lines 41-51. The zeolite component may optionally be combined with a matrix material. See column 19, lines 64-66. An acceptable unit cell size ranges from 23.3-24.7 angstroms. See column 16, lines 46-49. The reference further teaches that the catalyst is separated, stripped, regenerated in the presence of oxygen and recycled back to the reaction zone. See column 27, line 51, column 28, line 23, column 29, lines 63-64 and column 30, lines 23-30.

The reference of Beck et al.(4,588,702) succeeds at disclosing a cracking process which results in the production of a gasoline with steps and catalyst components corresponding to those claimed by applicants.

It is noted that the reference does not refer to a reduction in the sulfur concentration of the feed. However, the reduction sulfur in the feed is considered to be inherent in the process because the same feed is contacted with the same catalyst and would inherently produce the same reduction in sulfur content.

Applicants' process is anticipated by the reference of Beck et al.(4,588,702) because it discloses the same process steps/catalyst claimed by applicants.

Claim Rejections - 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claim 4 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Beck et al.(4,588,702) in view of Kugler (4,944,864).

-See teachings of Beck et al.(4,588,702) above.

A difference is noted between the reference of Beck et al.(4,588,702) and applicants' claimed invention. The reference does not disclose the use of a vanadium containing catalyst.

The reference of Kugler (4,944,864) is cited to show that it is known in the art that vanadium contaminants in a hydrocarbon feed which remain on a catalyst during regeneration are oxidized and that the oxidized vanadium compounds become mobile and react with the zeolite

components of the catalyst. As a result, the regenerated catalyst contains vanadium. See column 4, lines 13-27.

The reference of Kugler succeeds in disclosing the concept that regenerated catalysts which are recycled in processes involving the treatment of vanadium containing feeds contain a vanadium component resulting from contamination during the regeneration process.

Since the reference of Beck et al.(4,588,702) discloses a vanadium containing feed and a catalyst regeneration, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a vanadium containing catalyst because the reference of Kugler teaches that it is known in the art that regenerated catalysts recycled for further cracking contain vanadium components. Applicants have not shown anything unexpected with respect to the use of a catalyst containing a vanadium component.

Claim Rejections - 35 U.S.C. § 103

Claims 7 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Beck et al.(4,588,702) in view of Tan-no et al.(5,646,082) and Kugler (4,944,864).

-See teachings of Beck et al.(4,588,702) above.

Several differences are noted between the reference of Beck et al.(4,588,702) and applicants' claimed invention. The reference does not disclose the specific unit cell size or SiO_2/Al_2O_3 ratio of the USY composition. In addition, the reference does not disclose the use of a vanadium containing catalyst.

The reference of Tan-no et al.(5,646,082) is cited to show that it is conventional in the art to crack a feed in the presence of a USY containing a rare earth with a unit cell size of 24.45-24.55 and a SiO_2/Al_2O_3 molar ratio of 5-11. See column 2, lines 55-60.

The reference of Kugler (4,944,864) is cited to show that it is known in the art that vanadium contaminants in a hydrocarbon feed which remain on a catalyst during regeneration are oxidized and that the oxidized vanadium compounds become mobile and react with the zeolite components of the catalyst. As a result, the regenerated catalyst contains vanadium. See column 4, lines 13-27.

The reference of Kugler succeeds in disclosing the concept that regenerated catalysts which are recycled in processes involving the treatment of vanadium containing feeds contain a vanadium component resulting from contamination during the regeneration process.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the unit cell size and the SiO_2/Al_2O_3 ratio disclosed by the reference of Tan-no et al.(5,646,082) for the USY catalyst used in the Beck et al. process because the reference of Tan-no et al.(5,646,082) illustrates that such a unit cell size and a SiO_2/Al_2O_3 ratio are conventional in the art for cracking hydrocarbon feedstocks. Applicants have not shown anything unexpected with respect to the claimed unit cell size or SiO_2/Al_2O_3 of the USY component.

Since the reference of Beck et al.(4,588,702) discloses a vanadium containing feed and a catalyst regeneration, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a vanadium containing catalyst because the reference of Kugler

teaches that it is known in the art that regenerated catalysts recycled for further cracking contain vanadium components. Applicants have not shown anything unexpected with respect to the use of a catalyst containing a vanadium component.

Claim Rejections - 35 U.S.C. § 103

Claims 9-12 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Beck et al.(4,588,702) in view of Occelli (4,615,996).

-See teachings of Beck et al.(4,588,702) above.

A difference is noted between the reference of Beck et al.(4,588,702) and applicants' claimed invention. The reference of Beck et al.(4,588,702) is silent with respect to the catalyst particle size.

The reference of Occelli (4,615,996) is cited for the general teaching that it is conventional in the art to use catalysts with particle sizes of less that 75 microns in FCC processes. See column 1, lines 25-30 and lines 35-40.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a catalyst particle size of less than 75 microns in the Beck et al. process because the reference of Occelli (4,615,996) illustrates that such catalyst particle sizes are conventional in the art for hydrocarbon cracking. Applicants have not shown anything unexpected with respect to the size of the catalyst particles.

In addition, the particle size is not considered to be a patentable distinction over the applied art because changes in size are not invention of a rule. In re Rose, 105 USPQ 237 (CCPA 1955).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

This is a provisional obviousness-type double patenting rejection.

Claims 1-4 and 6-12 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2 and 4-12 of copending Application No. 09/221,540. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications are drawn to a process of reducing sulfur in a catalytically cracked petroleum containing organosulfur compounds in the presence of a catalyst containing a first metal which is on the interior pore structure of a molecular sieve and a second metal component which comprises a rare earth.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

This is a CPA of applicant's earlier Application No. 09/221,539. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nadine Preisch whose telephone number is (703) 305-2667. The examiner can normally be reached on Monday through Thursday from 7:30 am to 6:00 pm.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

June 7, 2000
N.P.

Walter D. Griffin
Primary Examiner